Citrus fruits.—Most of the damage was to citrus fruits, estimated by the State Citrus Exchange at 1,000,000 boxes.

Telephone and telegraph.—Considerable damage was done to telephone and telegraph equipment, to the extent of many thousand

dollars, specific figures not being available.

Highways.—Highways suffered from the south-central east coast where the storm approached the coast, thence northwestward to point of exit. Minimum of \$100,000 estimated by Florida State Highway Commission.

Bridges.—Washing rains damaged roadways and bridges, de-

moralizing schedules for several days.

Trees.—Many trees were uprooted in Osceola, Brevard, Orange

and Marion counties.

Buildings and houses.—The following counties reported damage in connection with houses and buildings: Marion, Brevard, Oscoola, and St. Lucie. Reports are still incomplete as to damage.

Storm of August 7-21, 1928.—The disturbance was first noted as one of slight to moderate intensity west of Bridgetown, Barbados, on the evening of the 7th, advancing west-northwest. (See fig. 1, track 2.)

On the evening of the 8th, the following was issued:

Tropical disturbance central about 150 miles south-southwest of Porto Rico moving northwest or west-northwest, of moderate intensity. Caution advised Santo Domingo, Haiti, Jamaica, and contiguous waters next 24 hours. Disturbance is apparently heading for southern Haiti coast.

The following was issued on the morning of the 9th:

Tropical disturbance probably of moderate intensity, 75 to 100 miles south of Santo Domingo coast, moving northwest. Caution advised against; strong northeast and east winds this afternoon and to-night, Santo Domingo and Haiti, and to-night in Windward Passage. Caution also advised Jamaica and eastern Cuban waters to-night.

The next direct information was given by a special report from the S. S. J. A. Moffett, taken at 9 a. m., the 9th, in latitude 15½°, longitude 69°, barometer 29.46, westward 48 miles; later an 11 a. m. observation showed wind shifting to south. Accordingly, special advices were sent to Haiti and Jamaica as follows:

Disturbance of considerable intensity moving apparently westnorthwest. Extreme caution advised Jamaica and southern Haiti.

Belated reports indicate that a very small but destructive disturbance passed over extreme southwest Haiti during the 10th.

On the morning of the 11th the center of the disturbance was over extreme eastern Cuba, the U.S.S. Arkansas in Guantanamo Bay having reported an east wind of 78

m. p. h. at 4:30 a. m. of that date.

As far as telegraphic reports are concerned, the center was not definitely traceable for the next 24 to 36 hours, but reports received by mail indicate that a small center passed over the province of Oriente, Cuba, where some banana trees were blown down, and was central on the morning of the 12th on the north coast of central Cuba. Observations during the afternoon of the 12th indicated a disturbance southeast of Key West, and an advisory was sent to southern Florida stations. At 8 p. m. of that date it was evident that a small but intense disturbance was advancing northwestward toward the Florida Keys and advices were disseminated for gales over this region, possibly reaching hurricane force near the center. Storm warnings were ordered from West Palm Beach on the east coast southward to Key West and thence northward along the west coast to Punta Russa and Punta Gorda. On the 13th storm warnings were extended north and west to Mobile. The disturbance advanced on a north-northwest course just off the west coast of Florida and passed inland a short distance west of Cedar Keys, attended by gales in that region. Gales were also experienced along the coast and over the Florida Kevs.

KANSAS TORNADOES, 1914–1928

By S. D. FLORA

[Weather Bureau Office, Topeka, Kans., November 13, 1928]

Beginning with 1914, special care has been taken to record important facts concerning each tornado that has occurred in Kansas. This has been largely possible through the network of more than 140 stations of the Weather Bureau in the State, representing conditions in every county. In addition, reports of tornadoes are furnished by weather correspondents of the bureau and by clippings from newspapers of the State. In practically all cases details concerning each storm have been gathered by questionnaires mailed observers and correspondents of the bureau, postmasters, and other responsible persons in or near the path of the storm.

While some areas of Kansas, especially in the western half, are rather thinly settled, it is believed that few, if any, tornadoes have appeared in the State during the time covered that are not given in the tabulation accompanying this article. Certainly none of consequence has

escaped notice.

The total number tabulated for the 15-year period is 176, or an average of slightly less than 12 per year. In a number of instances the appearance of a number of funnel-shaped clouds at the same time or at different times in course of the progress of a storm has been considered as a single tornado.

The total number of deaths directly due to these tornadoes is 102 and the total property loss for which estimates are available is \$9,547,150. As there are several rather damaging tornadoes for which no estimates are available, the actual property loss is probably a little in excess of \$10,000,000, or approximately \$700,000 annually. This does not include losses due to violent winds not of tornadic origin, which have been considerable.

Undoubtedly, Kansas is in what is known as the tornado belt of the country but it is interesting to note that it lies at the western edge of this belt. Of the 176 storms tabulated 45 per cent occurred in the eastern third of the State, 34 per cent in the middle third, and but 21 per cent in the western third.

There is no reason to think that Kansas is more infested with tornadoes than several other States. While statistics for the past 15 years are not available for comparison, the discussion of tornadoes in the 8-year period, 1916-1923 by Hunter, Monthly Weather Review, May, 1925, showed during 25 years more tornadoes per unit area in Iowa than in Kansas and practically as many in Arkansas, Illinois, and Missouri.

Losses of lives and property during an 8-year period were much greater than in Kansas in Alabama, Illinois, Indiana, and Minnesota. This, of course, may be partly due to the greater density of population and buildings in states east of Kansas although the greater average length of paths of the eastern tornadoes probably has

much to do with it.

Comparatively few Kansas tornadoes travel more than 40 miles. Of the 176 tabulated but 5 left paths of 50 miles or more in length. The longest was the violent storm that struck Hutchinson on May 7, 1927, which disappeared 118 miles from its point of origin, though its actual path, owing to meanderings it pursued, was somewhat longer. A large number of the tornadoes listed struck at but one place, then lifted and disappeared.

But three tornadoes in the history of the States have caused a property loss as great as \$1,000,000. These are the Hutchinson storm of May 7, 1927, the Great Bend storm of November 10, 1915, and one that struck Augusta and near-by oil fields on July 13, 1924.

May and June are undoubtedly the outstanding tornado months in Kansas. During the 15-year period 65 of the 176 tornadoes occurred in June and 30 in May. None were reported in January or December.

The late afternoon, from 3 p. m. to 6 p. m. has been the usual time of occurrence though some tornadoes have been sighted shortly after the noon hour and some have formed almost as late as midnight. Three occurred between 3 a.m. and 5 a.m., but none during the forenoon.

Kansas tornadoes by years

Year	Num- ber occur- ring	Loss of life	Property loss	Year	Num- ber occur- ring	Loss of life	Property loss
1914	8	10	\$185,000	1923	18		#007 ppg
1915	10	20	1, 280, 000	1924		ı	\$267,000
					15	2	2, 134, 300
1916	- 8	3	249, 000	1925	12	0	377,000
1917	18	31	1,881,000	1926	16	0	161, 200
1918	6	10	810,000	1927	19	19	1, 471, 750
1919	5	5	229,000	1928	25	1	286, 900
1920	4	Ŏ	202,000				200, 000
1921	6	ŏ	5,000	Totals	176	102	0 847 150
				I otals	110	102	9, 547, 150
1922	6	0	8,000	1			l

County and year	Date	Hour	Storm moved from—	Width of path	Length of path (miles)	Loss of life	Property damage (estimated)	Remarks
1914 Rice	Mar, 28	5:30 p. m	sw			0	\$85,000	Chief damage in Frederick. At least 2 funnel-shaped clouds
Sumner	Apr. 17	đo	gu,	1/4 mile	10	0	100, 000	were seen. Lasted 30 minutes; 12 persons injured.
Butler	June 1			Mile		ő	Small.	Occurred about 7 miles north of Eldorado. Tornado cloud failed to reach the ground.
Smith	June 2	6:15 p. m				0	None. Small.	Tornado cloud failed to reach the ground.
BourbonElk, Wilson and Green-	Aug. 19 Oct. 9	5:30-6:30 p. m	NW				Sillati.	Tornado cloud did not quite reach the ground. 3 tornadoes reported, though probably were different appearances of same cloud; 30 houses and barns destroyed. Damage
wood.		-						ances of same cloud; 30 houses and barns destroyed. Damage not estimated.
Montgomery	do	7:30 p. m 8:00 p. m				10 0		Loss of life is total for the five storms of October 9. Occurred near Galena. Very little damage.
1915								
Wichita	June 3	6:00 p. m	8W	1 mile 3g mile	Several.	1	\$40,000	Struck 3 miles northwest of Leoti.
	June 11	6:30 p. m	sw] § mile	50	U	75, 000	Formed near Mullinville; 8 funnel-shaped clouds seen; 3 reached the ground.
Pottawatomie	June 17	4:00 p. m	SE	50 yards	4	5	5,000	Passed near Onago, path decidedly curving. Formed 4 miles northwest of Burlington.
Coffey	do	5:00 p. m	8W	1/2 mile	10	0	40,000 53,000	Formed 4 miles northwest of Burlington. Chief damage in and near Fort Scott.
Frant	June 23	3:00 p. m	DW			ő	53,000	4 tornado clouds seen northwest of Ulysses. Damage very
Crawford	June 30	-	NW			0	2,000	small. Occurred near McCune.
Barton	Nov. 10	7:00 p. m		1,000 feet	35	11	1,000,000	Chief damage in Great Bend.
Pratt	do	8:30 p. m	sw	100 feet	.4	0	15,000	Occurred near Prott
Pratt Sumner Bourbon	Apr. 19	8:30 p. m 10:00 p. m 4:30-5:00 p. m	sw	600 feet	16 30	3 3	50, 000 150, 000	28 persons injured. Chief damage at Zyba and Derby. Passed near Fort Scott and into Missouri. 2 funnel-shaped clouds seen near point of origin. Storm path a mile wide in
							,	niaces.
ackson and Jefferson	do	3:30 p. m 4:00 p. m	sw	100 to 400 feet	12 5½	0	20, 000 60, 000	Town of Hoyt struck. Passed near Elmore.
Allen Woodson and Coffey	do	3:00 p. m	•		t a	0	2,000 3,000	Passed near Lomando, Vernon, and LeRoy.
Wilson	do	3:00 p. m 4:00 p. m	8W	1/4 mile100 to 800 feet		0		Passed near Buxton.
Rooks and Osborne Harper and Kingman	May 20do	7:00 p. m 9:00 p. m	sw	100 to 800 feet	15 25	0	12, 000 2, 000	Originated near Codell. Disappeared just east of Norwich.
herokee	Sept. 3					ő		Occurred near Golena. Path short and damage small.
1917								
Allen	Mar. 22	8:00 p. m	0317			0	2, 500 3, 000	Occurred near Carlyle.
Elk Iaskell and Gray	do Apr. 18	About 2:30 p. m	8W	100 vards to 14	40	0	3,000 10,000	Damage small. Passed near Howard. Originated southwest of Santanta. No towns struck.
Rooks	May 20	6:00 p. m	sw	100 yards to 1/2 mile.	40	0	,	
Decatur	May 25	1:00 p. m	l	i	10	0	1, 000	As many as 3 funnel-shaped clouds seen. Passed near Plain- ville; damage comparatively small. No towns struck.
Lincoln	do	3:00 p. m	sw				2, 500	2 funnel-shaped clouds followed separate paths, 1 passed south- east and 1 north of Sylvan Grove.
Elk, Woodson, Green- wood, and Allen.	do	6:30 p. m	sw	1/4 mile	58	1	50, 000	Path was from near Howard to near Leanna. Storm moved 50 miles in 25 minutes.
Sedgwick, Harvey,	do	2:00-2:50 p. m	sw	Few rods to 11/4 miles.	65	12	600,000	Worst damage at Andale. Storm moved 40 miles in 45 to 50 minutes. At least 2 funnel-shaped clouds seen.
Butler, and Marion. Montgomery	June 1	5:05 p. m	8W	con to con foot	9	3	500,000	Chief damage in Coffeyville. Passed over Pomona.
Franklin Labette and Cherokee	do	_6:00 p. m	8W	1/4 mile. 100 to 200 feet	10 10	0	15, 000 7, 000	Passed over Pomona. Path extended from near Montana to near McCune.
ohnson	do	5:05 p. m _6:00 p. m do 30 p. m	SW SW SW	80 rods	25	4	10,000	Originated near Morse and then moved into Missouri.
Douglas	June 5	5:00 p. m 5:45 p. m	8W	1/4 mile	1	1	50,000	Chief damage at Clinton.
Doniphan	do	5:45 p. m	WNW	300 yards	4 15	0	15,000 30,000	Occurred near Troy. Path extended from near Shaw to near Savonburg
Neosho Franklin, Miami, and	do	6:00 p. m. 6:15 p. m.	SW	1 mile	40	Ô	10,000	Path extended from near Shaw to near Savonburg. Path extended from near Pomona to near Olathe.
Johnson. Wabunsee, Shawnee, Jackson, and Jeffer-	do	4:22-5:15 p. m	l	l.	45	9	500, 000	Path close to Topeka. Town of Elmont practically destroyed. Moved at the rate of 30 miles per hour. Several pendant
son. Pottawatomie and Wa-	June 12	8:30-9:00 p. m	NW	1/4 to 1/4 mile	15	0	75, 000	clouds seen. Louisville struck.
baunsee.								
1918								
Elk, Greenwood, Wood- son, Allen, Bourbon, and Linn.	Feb. 27	8:00-10:00 p. m	sw		100	0	200, 000	Series of thunderstorms with 1 or more tornadoes in path. Storms ended in Missouri.
Elis, Rooks, and Os-	May 20	Between 8:30 p. m.	8W		40	10	450, 000	Tornado occurred in connection with violent thunderstorms.
bourne.	de l	and midnight.			3	0	100,000	Chief damage at Ellis and Codell. Occurred 10 miles southeast of Wakeeney.
regovogan	do	5:50 p. m	SE	100 feet to ½ mile.	25	Ō	10,000	Occurred 4 miles southeast of Russell Springs.
Vemaha	May 26	5:45 p. m	8W	500 feet	22	Ò	50, 000	Every building in Bern damaged. Storm extended to near Falls City, Nebr.

County and year	Date	Hour	Storm moved from—	Width of path	Length of path (miles)	Loss of life	Property damage (estimated)	Remarks
1919								
Jackson and Atchison	Mar. 15	Noon	sw	Narrow	20	0	\$13,000	Chief damage in Muscotah.
Barton Prego	Apr. 28 May 18	5:15 p. m	SW	150 feet	1 10	1 0	6, 000 10, 000	Ellinwood struck. Passed 3 miles to southwest of Collyer. Pursued a zigzag path
Barton	Oct. 8	4:04 p. m	<u>sw</u>	100 feet 400 feet	9	4	200, 000	Hoisington struck: 25 persons injured. Damage small; moved from near Dundee to within 2 miles of
Do	do	4:30 p. m	SW		8	0		Damage small; moved from near Dundee to within 2 miles of Great Bend.
1920								order solid.
Greenwood	May 3	5:20 p. m	NW	100 yards		0	200, 000	Chief damage in eastern section of Eureka.
Douglas	July 1	7:40-8:00 p. m					1,000	Damage occurred in North Lawrence. Several incipient torns do clouds seen.
Riley	July 31	3:00-4:00 a. m	sw	200 feet	134	U	1,000	Occurred 5 miles north of Manhattan.
efferson	Sept. 23	7:30 p. m		14 mile		U		Occurred near Winchester. Damage small.
1921								
Beward	Apr. 4	About 7:00 p. m	SE			0		Damage slight; three tornado clouds seen.
Seward	May 9	4:10 p. m	SW	100 feet to ¼ mile_ 100 feetdo	10	Ü		Damage slight; three tornado clouds seen. Originated near Lincoln. Damage small.
ackson	May 26	6:00 p. m	Wsw	100 feet to 1/2 mile_	10 2	1 0	5,000	Formed near Mayetta; 5 persons injured. Damage very small. Occurred in western suburbs of Topeka
dreeley	Aug. 3	4:30 p. m	NW	do	10	0		Damage sight, three tornato clouds seen. Originated near Lincoln. Damage small. Formed near Mayetta; 5 persons injured. Damage very small. Occurred in western suburbs of Topeke Damage small. Occurred in thinly settled country in north west part of country. No damage done. Occurred near Plaine.
Meade	Sept. 7	 		 		0	- - ,	No damage done. Occurred near Plaine.
1922		-						
				İ				
Wichita	Apr. 23	0:00 p. m	NE		5	0		Damage small. Occurred northwest of Leoti. Damage small. Occurred in southwest part of county. Occurred in northeast part of county. Town of Fellsburg struck.
Wichita	Aug. 8	0.00 p. m			134	Ŏ	3,000	Occurred in northeast part of county.
Edwards	Sept. 8	2:36 p. m	SW	⅓ mile	2	0	5, 000	Town of Fellsburg struck.
Wichita Ellis Wichita Edwards Olark Mitcheli	do	p. m				ŏ		Considerable damage. Formed southeast of Mineola. Damage small. Occurred at Beloit. Path short.
1923						-		
·	3.5	* 00 = 04	Draw.					
Brown and Doniphan	Mar. 3	5:00-6:35 p. m	WSW	! 	35	0	14, 000	Missouri through St. Insenh, where damage totaled \$50,000
Da	4	F.00	1 777	000 6	1 .			Path not continuous. Town of Partridge struck. Damage small. Passed 3 miles south of Pretty Prairie. Damage small. Passed short distance north of Pretty Prairie.
Reno Do	Apr. 2	5:30 р. ш	W	300 leet	1 1	0	50, 000	Town of Partridge struck. Damage small Passed 3 miles south of Pretty Prairie.
DoMarshall	do	5,00 m m	C 107	174217-03		0		Damage small. Passed short distance north of Pretty Prairie
viarsnam	Apr. 28	5:00 p. m	SW	1/2 to 1/2 mile	3	0		sons killed. Total damage was considerable in Kansas
			}					Total damage in both States was \$32,000. Total length of
Stanton	Apr. 27	Shortly after noon	w	100 yards	10	1	1, 500	3 tornado clouds seen: storm formed in Colorado and move
Seward and Meade	-	1 1		Wide	1	0	_,	across nothern part of Stanton County.
i		_		1	1	٠		Damage small. Passed short distance north of Pretty Prairle Storm formed over Oketo, moved into Nebraska, where 3 per sons killed. Total damage was considerable in Kansas Total damage in both States was \$32,000. Total length opath in both States was 14 miles. 3 tornado clouds seen; storm formed in Colorado and move across nothern part of Stanton County. Damage from wind light, but much damage from accompanying hail. Passed through edge of Plains. Damage small. Occurred between Delsvan and Wilsey. Damage small. Occurred 10 miles northwest of Hazelton. Greensburg struck: 8 persons injured.
MorrisBarber	May 19	3:00 p. m Evening	sw	Narrow	7	0		Damage small. Occurred between Delavan and Wilsey.
Kiowa Sedgwick	do	6:00 p. m	SW	600 feet	9	Õ		Greensburg struck: 8 persons injured. Traveled from Clonmell to northern edge of Wichita in 3
Sedgwick	do	8:55-9:30 p. m	sw	1 mile in places	30	0	100, 000	Traveled from Clonmell to northern edge of Wichita in 3 minutes.
Ford	May 31	Evening	sw	(0		Damaga comparatively small Occurred 6 miles southwest
Wichita	Ang 4	5·10 n m	w			0	Larg	Dodge City. Leoti str = ck and many buildings in town destroyed. Damag
	-						_	not estimated. Several persons injured
FinneyRice	Sept. 17	6:00 p. m	W	150 feet	4	0	do	not estimated. Several persons injured Damage severe at Garden City, but amount not estimated. Damage small. Occurred in southwest part of county. Chief damage in Belleville.
Republic	Sept. 20	3:00 p. m	8W	150 feet	6	ő	\$1,500	Chief damage in Belleville.
Harvey	Sept. 26	10:30 p. m.				0		Occurred near Halstead in connection with violent shunde storm which caused \$210,000 damage. Very small per cer
O	G4 07	1 1	G 707					of this due to tornado itself.
Gray	Sept. 27	5:17 p. m	SW			0		Damage small. Occurred between Cimaron and Ingalls.
1924								
Nemaha	Mar. 3	Evening	sw		15	0		Damage amounted to several hundred dollars. Occurre
Harper	Mar. 28	2:30 p. m	sw	125 yards	10	0	8,000	between Seneca and Bern. Most of damage at Crisfield.
Elk Franklin	do	4:30 p. m 5:30 p. m	SW	125 yards	. 7	0	800	Formed near Moline.
	do	_	1			0		Considerable damage, not estimated. Originated near Pomona. No towns struck.
Brown Wilson and Woodson	do	5:00 p. m Evening	§W	40 feet	1 15	0		Damage small. Occurred near Hiawatha.
Brown	June 7	5:00 p. m	w	40 1001	8	Ö		Ended near Yates Center. Several thousand dollars damag Several small tornadoes occurred close together; 1 near Mercie
			İ	1				Several small tornadoes occurred close together; I near Mercie I near Willis, and I near Baker. Probably a reappearance same cloud. Damage small and paths short.
Montgomery, Labette,	June 9	5:00-6:30 p. m	W		. 50	1		Considerable damage. Occurred at Halowell and Coffeyvill
and Cherokee. Crawford	June 20	1:00 p. m.	1	}	i	0		· ·
Doniphan	June 24	Between 5:00 and	Wsw	Narrow		ŏ		Damage small. Occurred at Arma. Path very short. 2 tornadoes near Wathena. Damage light in Kansas but heav
Ford	July 13	6:00 p. m. 3:30 p. m.	1		į.	0	500	near St. Joseph, Mo. Occurred 4 miles west of Dodge City. Damage small.
McPherson	do	7:00 p. m	NW		10	Ö	100,000	Damage occurred chiefly at Conway, Windom, Inman, an
						ļ		Groveland. Tornado occurred in connection with violen
Butler	do	8:15-8:45 p. m	WNW	100 feet to 2 miles	. 23	1	2, 000, 000	thunderstorms. Greatest destruction at Augusta and to oil rigs. Storm travele
Bourbon	de	9:30 p. m	ł			0		23 miles in 30 minutes. Damage only a few thousand dollars. Occurred at Devoi
		1 -		1	ſ	1		Path several miles long.
Marion	Sept. 10	Afternoon		1/2 mile	7	0	25, 000	Occurred at Marion.
1925			}		}	i		1
Montgomery	Mar. 18	5 a. m	sw.	3 miles	30		50,000	Greatest damage at Degring
Chase and Morris	Apr. 23	Between 2:00 and	šsw	3 miles 300 to 400 feet	36	0	12,000	Greatest damage at Dearing. Path extended from southwestern part of Chase County
	do	3:00 p. m. 4:00 p. m	ſ	Narrow	Į.	0	İ	near Dunlap, but not continuous. Damage amounted to several thousand dollars, chiefly i
Atchison		, P. W	***	144.077	1.0	U		pomogo amounted to several monsand donars, cuteny i
Atchison					(Atchison.
Atchison		Between 3:00 and 4:00 p. m.	sw	50 to 100 yards	15	0	65, 000	Formed 2 miles south of McPherson.

				·			T	•
County and year	Date	Hour	Storm moved from—	Width of path	Length of path (miles)	Loss of life	Property damage (estimated)	Remarks
1925—Continued								
Riley and Pottawato-	June 2	5:00 p. m	_ sw	50 to 100 feet	_ 10	0	\$35,000	Disappeared near Garrison. Several tornado clouds seen.
mie. Scott		Afternoon		100 feet 200 yards	4	0		Damage small. Occurred near Manning.
Clay	1	1 8:00 nm	1		1	0	10,000	Originated 4 miles northeast of Clay Center.
OttawaBrown	June 17	8:30 p. m 4:00 p. m	wsw	1 mile	18	0	100,000	Chief damage at Delphos. Very little damage.
Sheridan Wyandotte	_ Aug. 14	Evening	_			0	5, 000	Damage small, mostly at Seguine. Chief damage near Bethel.
1926	-							
Butler	May 13	2:30 p. m.	WNW.	300 feet	1	0	500	Occurred near Elbing.
Barber Jefferson	May 15 June 15	Afternoon	. sw	300 feet	- 8	0	8,000	Occurred near Elbing. Occurred 6 miles west of Hardtner. No damage. Cloud failed to touch ground. Was sighted near
Shawnee and Jefferson.	June 16	5:00 p. m	wsw	Narrow	. 5	0		Grantville. Damage small. Formed at eastern edge of Topeka; 2 tornado
Greenwood	do		1		1	0	100, 000	clouds seen. Occurred 12 miles north of Eureka in Thrall oil field. Damage
	1]					includes that of 2 other Greenwood County tornadoes of
Do Do Mitchell	do	Late afternoondo		 		0		same day, chiefly to oil rigs. Occurred at Sallyards. Path short. Occurred near Climax. Path short.
Mitchell	June 20	Between 5:00 and 6:00 p. m.	8W		25	ŏ		Damage small. Path extended from near Hunter to near
Ellsworth and Saline	. do	7:30 p. m		100 feet to ¼ mile		0	40,000	Beloit but not continuous. Passed 2 miles north of Ellsworth. Several pendant clouds reported.
Nemaha Doniphan	do	8:00 p. m		200 yards 160 yards		0	3, 000 1, 200	Occurred at Seneca. Occurred at Severance.
Dickinson and Morris Rawlins	. July 8	9:30 p. m.	NW	160 yards	25	0	6, 000 2, 500	Path extended from near Abilene to near Parkerville. Occurred in northern part of county in connection with thun-
								derstorms. Path not well defined.
Marshall and Nemaha		1			1	1		Considerable damage, not estimated. Occurred in northern parts of counties.
Finney and Gray	i	ĺ	i		1	- 1		No damage reported. Cloud seen for about 5 minutes, only, and was 25 miles northwest of Dodge City. Funnel cloud failed to reach ground but passed directly over
Ford	do	7:15 p. m	. SW	i 		0		Funnel cloud failed to reach ground but passed directly over Dodge City. Some damage from high winds in Dodge City.
1927 Cloud	Mor 11	About 5/20 p. m	611.	50 fact	Short	0	150	Occurred near Aurora.
Jackson	do			50 feet 100 feet		0	7, 000	Extended from southwest of Holton to near Netawaka. Path
Doniphan	do	8:00 p. m.	sw	150 yards	31/2	0	1, 500	not continuous. Occurred southwest of Wathens.
Gray Harvey	Apr. 18	7:00 p. m 1:30 p. m	w	150 yards 200 yards	1/2	0	600	Damage small. Occurred 7 miles southwest of Newton.
Cowley							100	Occurred in edges of Arkansas City. Cloud dipped to earth in but one place.
Jewell Comanche		3:30 p. m 5:00 p. m	NNE	100 yards		0		Originated in Nebraska. Little damage in Kansas. No damage; 2 tornado clouds appeared 10 miles west of Aetna.
Comanche, Barber, Kingman, Reno, and McPherson.				}2 to 2 miles		10	1, 300, 000	Paths not well defined. Storm struck East Hutchinson where most of damage was done; 300 persons injured. Storm pursued a zigzag path at rate of about 18 miles per hour.
FordShawnee	May 17 June 3	Late afternoon 4:40 p. m	wsw	100 feet	514	···	400	Occurred 3 miles east of Ensign. Damage small. Occurred in suburbs of Topeka.
Do	do	0:00 p. m	9 W			- 1	1,000	Occurred near Auburn; 2 tornado clouds seen pursuing parallel paths 100 to 150 feet apart.
Lane	June 4			⅓ mile	1	0	50, 000	Occurred in connection with thunderstorm near Shields. Path not well defined.
Jackson and Atchison Wabaunsee and Osage		7:45 p. m 4:00–4:30 p. m	SW	900 feet	30 12	0 2	1,000	Damage mostly in Muscotah. Extended from near Harveyville to Burlingame; 12 persons
Morris, Lyon, and	1			A few feet to 50	28	3	100,000	injured. Extended from near Dunlap to near Lebo. Traveled 28 miles
Coffey. Johnson and Wyan-			wsw	yards. 600 feet	4	4	160,000	in 30 minutes. Extended from Rosedale to South Park, a suburb of Kansas
dotte. Pratt and Barber		7:00 p. m			i - I	0	10,000	City; 40 persons injured. Extended from near Coats to near Sawyer.
Cherokee		_		200 yards	!	0	10, 000	Occurred east of Columbus.
1928	000. 2	12.10 8. 111	3 77	200 yai (3		١	10,000	Octained base of Columbias.
Smith	May 2	Between 8:00 and	NW		5	0	15,000	Occurred in northern part of county in connection with violent
Doniphan	May 15	8:30 p. m. 4:50 p. m	i		1 1	0	2,000	thunderstorms. Path not well defined. Damage occurred at White Cloud. Storm moved into Mis-
Rooks	June 5	6:30 p. m	1	300 yards	4	0	600	souri. Occurred near Zurich.
D0	ldo	7:30 p. m	NW	do	1 1	0	800 5, 000	Originated 2 ¹ 2 miles east of Plainville. Originated near Elkader, 25 miles south of Oakley.
Logan Bourbon and Crawford	June 8	3:00 a. m	N	Narrow	15	ŏ	5, 000	Formed south of Fort Scott. Damage chiefly in Godfrey, Garland, and Croweburg.
Finney Rawlins			, ,	600 feet to ½ mile		0	1,000 5,000	Occurred 8 miles north of Garden City. Originated southwest of Ludell. Moved to McCook Nebr., where much damage was done.
Logan Bourbon Rush	do	Midnight	SW SW NW	600 feet Narrow		0	12,000 6,000	Formed 4 miles east of Monument. Occurred 5 miles northwest of Garland.
Rush	June 16	5:30 p. m 6:00 p. m	NW	50 feet 100 feet	15 5	2	5, 000 3, 000	Formed near Nekoma. Occurred 5 miles southwest of Solomon; 4 distinct funnels seen.
Baline Ellsworth and Saline Rice	do	6:30 p. m	NW WNW NW	100 feet to ¼ mile 100 feet	8	ŏ	51,000	Passed close to Brookville. Formed 1½ miles northeast of Alden; 4 funnel-shaped clouds
		-		50 feet	_	0	1,000	sighted. Struck west edge of Falun. Path very short.
Saline Stafford	do	7:00 p. m	ÿ	½ mile	12	ŏ	10,000	Moved from near St. John to near Stafford. Pendant cloud larger at bottom than top.
Kiowa and Pratt	1	-		300 feet to ½ mile_	40	0	100,000	Moved from Greensburg to Sawyer; 3 distinct funnel-shaped clouds seen.
yon	June 17	3:00 p. m	NW	200 yards 300 yards	11/2 12	0	18, 000 20, 000	Formed near Americus. Moved from near Altoona to near Chanute.
tanton	June 19	8:30 p. m	NW	ooo yasus	7	0	5,000	Most of damage in Johnson. Damage small. Cloud as seen from Garnett scarcely reached
Inderson	June 22					9	1	the ground
Reno	June 23	7:00 p. m	N W	25 feet to ¼ mile	15	0		Originated 4 miles northwest of Arlington. Damage small. Occured in southwestern part of county. Damage small. Damage small. Occurred between Healy and Dighton.
love	Oct. 11	Near noon	sw	40 feet	Several.	0 -	20,000	Damage small. Occurred between Healy and Dighton. Path over rural sections; crossed southern part of Scott County.